Textbook Alignment to the Utah Core – Discrete Mathematics

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list (www.schools.utah.gov/curr/imc/indvendor.html.) Yes _X___ No ____

Name of Company and Individual Conducting Alignment:
Cathy Quigley, Independent Contractor on Pending Vendor List

A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

X On record with the USOE.

☐ The "Credential Sheet" is attached to this alignment.

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Discrete Mathematics, Grades 11-12

Title: Mathematics All Around, 3rd Edition (c) 2007, (Pirnot) ISBN#: 0-13-195997-2 (SE); 0-321-36151-2 (TE);

Publisher: Pearson

Overall percentage of coverage in the *Student Edition (SE) and Teacher Edition (TE)* of the Utah State Core Curriculum: 100%

Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: _____%

Topics for discrete mathematics are formed by combining a topic from combinatorics with a topic from graph theory. These topical ordered pairs (combinatorics topic, graph theory topic) are selected from the following lists according to teacher interest and expertise:

Percentage of coverage in the *student and teacher edition* for Standard I:<u>100</u> %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: _____%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition(SE) and Teacher Edition (TE) (*pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries*** ✓
Combinatorics				
	• Set cardinality	**30-32, 50, 52, 56-57, 59-60, 66-68, 69-73**		
	• Set theoretic foundations of addition, subtraction, and multiplication on {whole numbers}	**12-13 (Example 11), 16, 46-47 (Example 4), 49 (Example 6), 52, 55-56 (Example 1), 58-60, 62 (Exercise 43), 67-68, 75-76 (Example 1), 79 (Example 5), 81-83, 215-228, 255, 281 (Example 6), 298-299**		
	• Basic counting (multiplication and addition principles)	**4-5 (Example 2), 7-8 (Example 6), 15 (Exercises 19-22), 41, 104, 611-612, 681-690, 690-698, 698-711, 712-714, 715-719, 725-727**		
	• Binomial coefficients (subsets of sets)	**7 (Example 5), 41-42, 773-779**		
	• Recurrence relations (induction)	**308-311, 355-356, 384-391, 659-661**		
	• Special cases (e.g., partition numbers, Fibonacci sequences)	**7 (Example 5), 41-42, 75-76 (Example 1), 81 (Exercises 35-38), 247-253, 308-311, 313, 711**		

Graph Theory				
	• Definition of a graph via modeling sets and relations on sets	**146-161, 161-172, 172-180, 181-185, 186-194, 331-337, 342-347, 349 (Example 1), 355-356, 372-373, 375-376, 380-383, 401, 407-412, 414-415, 419-425, 751-752, 755-756, 838-846**		
	• Definition of directed graph via modeling non-symmetric relations	**15, 172-180, 185, 186-194**		
	• Investigations of specialized classes of graphs via modeling more restrictive relations	**147-148, 151-161, 161-172, 172-180, 183-185, 186-194, 331-337, 342-347, 349 (Example 1), 355-356 (Example 5), 419-425, 838-846**		
	• Modeling specialized problems (e.g., involving Euler circuits, traveling salesperson problem, DNA encryption)	**147-148, 151-157, 158-161, 161-172, 172-180, 183-185, 186-194, 355-356 (Example 5), 401, 419-425, 728-730**		
	• Special cases (e.g., problems involving traffic light sequencing, network flows, scheduling)	**103-104, 153-157, 158-161, 161-162, 166-168, 170-172, 172-180, 186-194, 419-425**		